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Making Infrastructure S'mores With Chef

Matt Stratton

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CHEF™

DevOps Days

@mattstratton

```
1  ▼ package “httpd” do
2        action :install
3  ▲ end
4
5  ▼ template “/etc/httpd/httpd.conf” do
6        source “httpd.conf.erb”
7        mode 0755
8        owner “root”
9        group “root”
10 ▲ end
11
12 ▼ service “httpd” do
13       action [:enable, :start]
14 end
15
```

What is Chef?

- Define reusable resources and infrastructure state as code
- Manages deployment and on-going automation
- Community content available for all common automation tasks

begins with

needs

<CODE/>

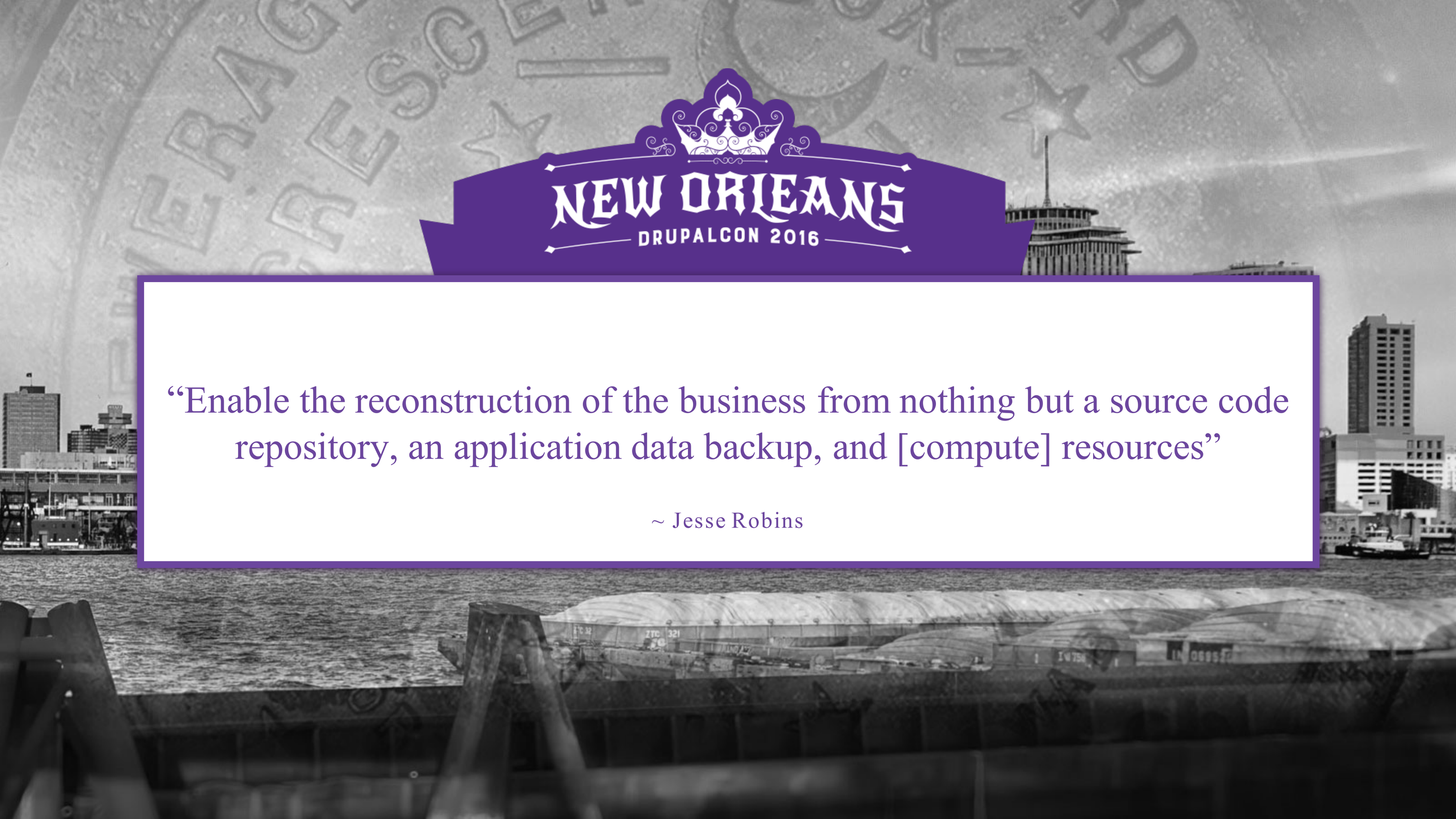
<CODE/> lets you

version infrastructure and runtime environments

create infrastructure and runtime envs consistently

test automatically

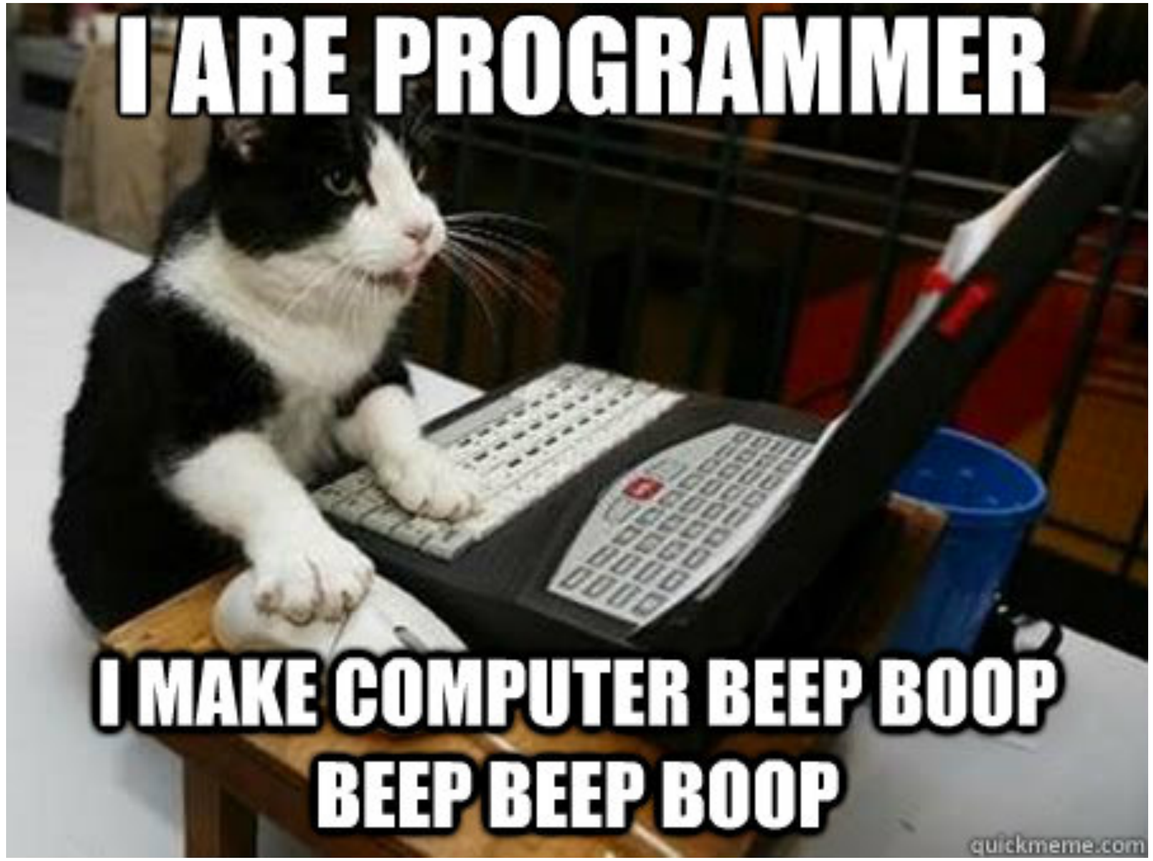
just like



"Enable the reconstruction of the business from nothing but a source code repository, an application data backup, and [compute] resources"

~ Jesse Robins

- Versioned
- Modularized
- Tested



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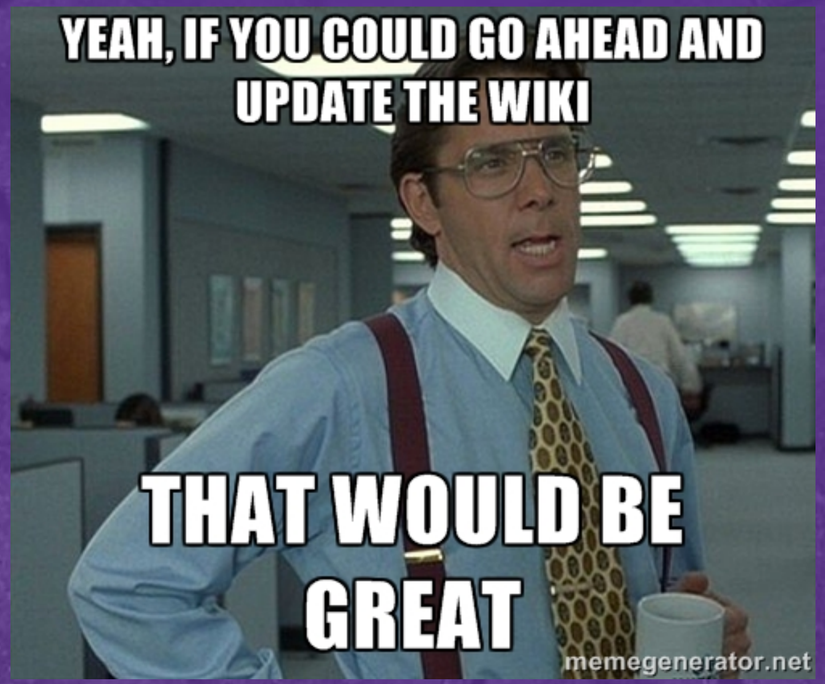
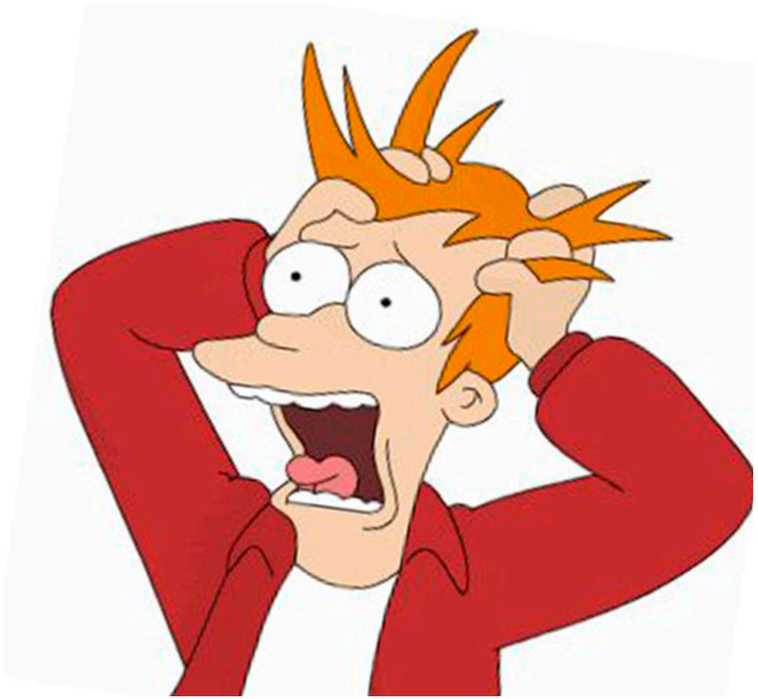
Executable Documentation



Domain Expertise

- Systems are complicated today
- Nobody can know everything about the stack
- Let your domain experts contribute their portion directly

Beware of hubris



ANYONE CAN DO ANYTHING???!!!

Old Way

Communicate Via Tickets

New Way
Communicate via code

People Make Mistakes

This doesn't scale

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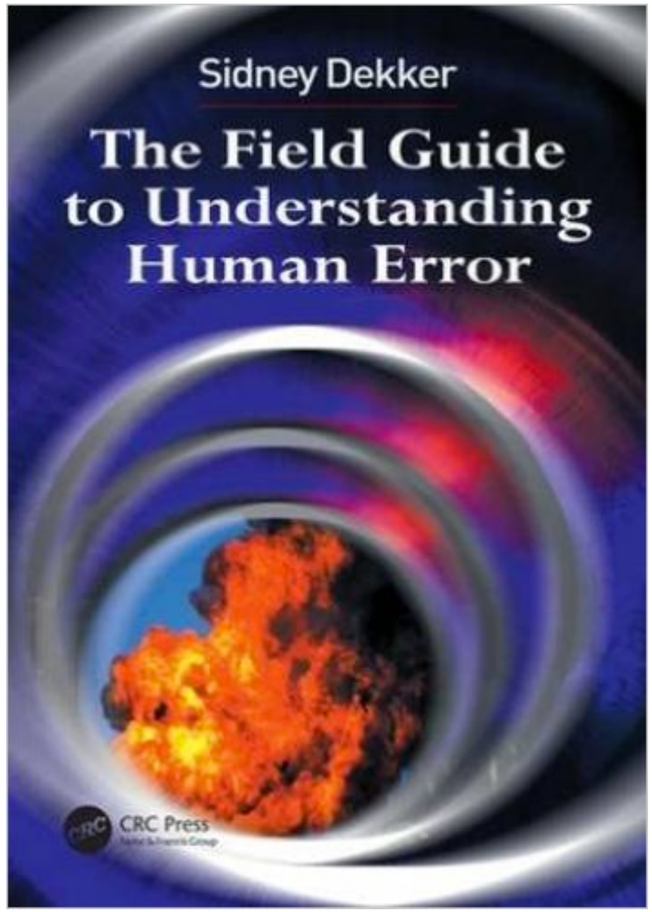
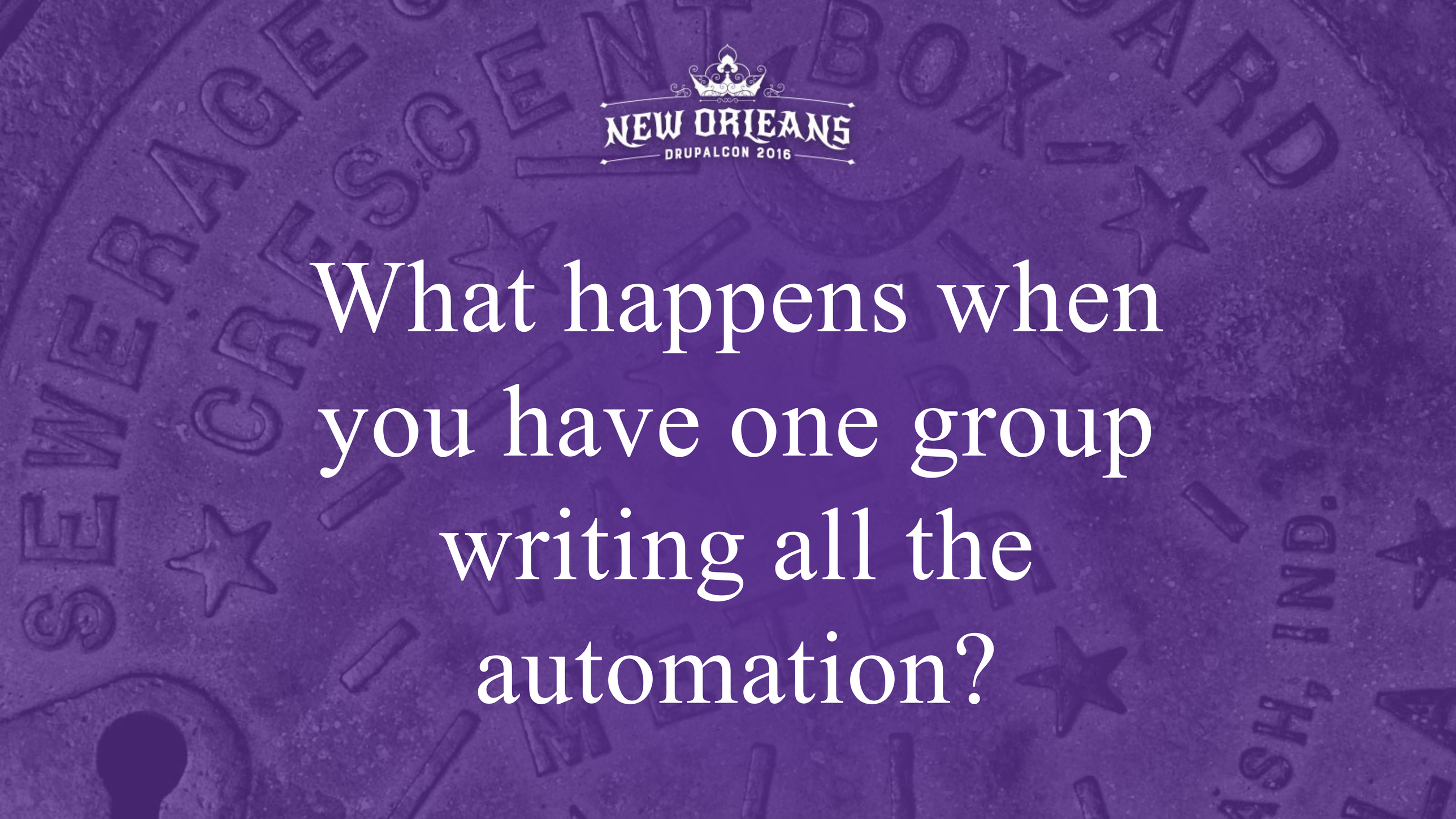
How do I make sure nobody messes stuff up?

Testing is Essential

Sidney Dekker's *Field Guide to Understanding Human Error* is probably the most important book for people like us, meaning people that are in the IT world



Communicate through code (redux)



What happens when you have one group writing all the automation?

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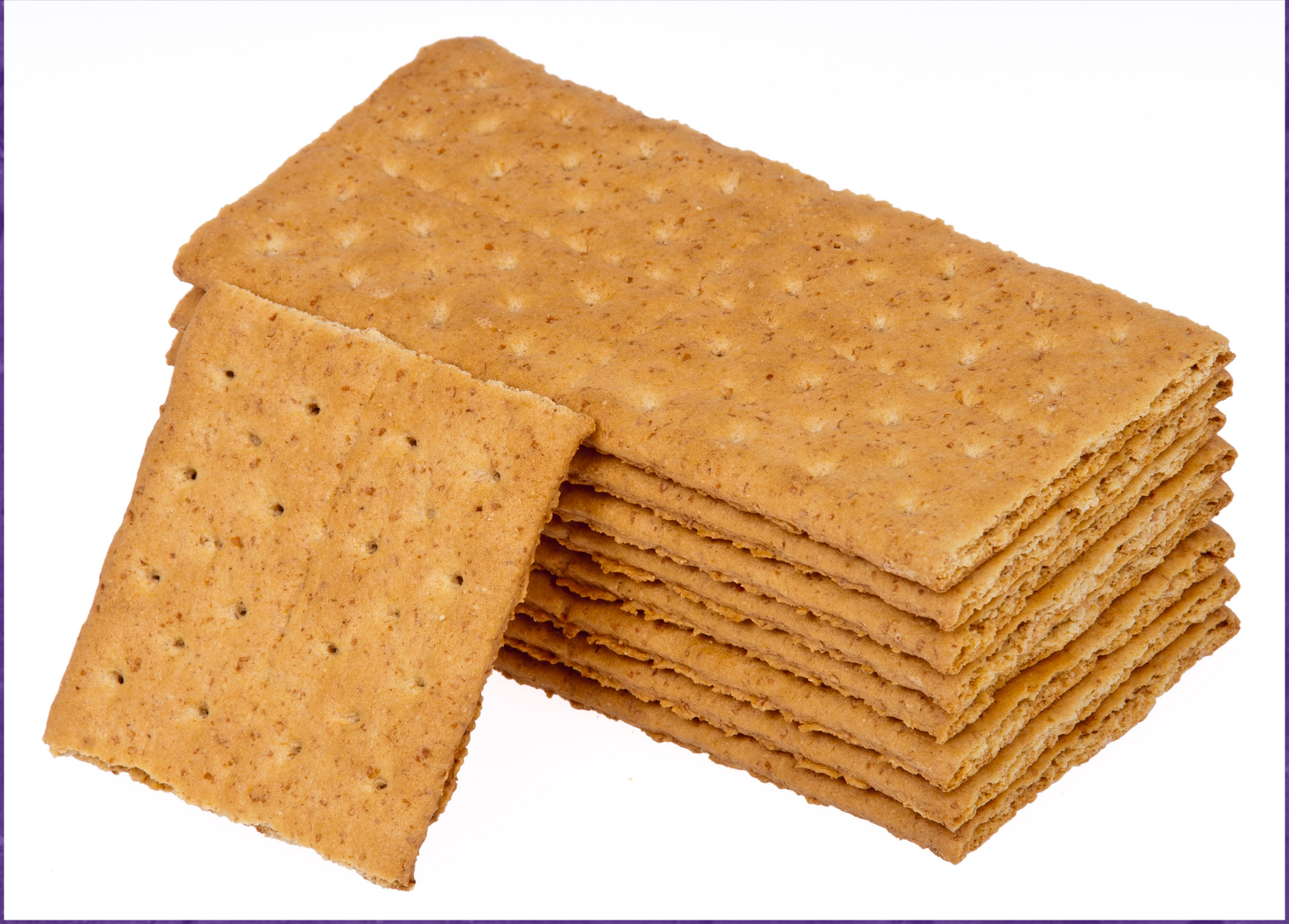

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How do we solve this?

Encourage local testing with Foodcritic

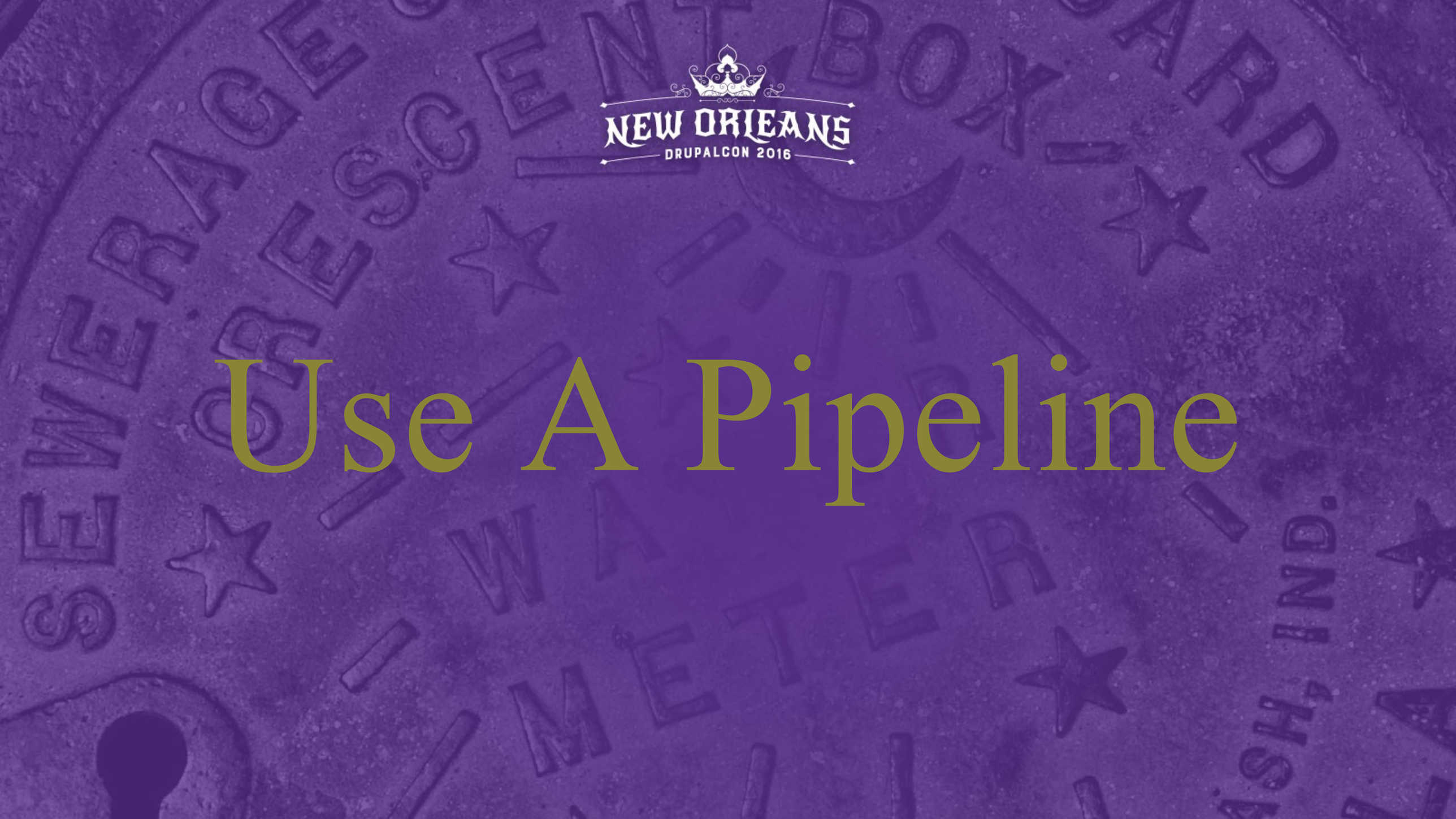
- Flag problems that might cause your Chef cookbooks to fail on converge
  - For example, FC010: Invalid search syntax
- Identify style/convention that has been adopted by the Chef community
  - For example, FC004: Use a service resource to start and stop services
- Run against static code, so tests are very fast (<5 seconds to run)

Example Foodcritic Rule

```
rule 'COMP001', 'Do not allow recipes to mount disk volumes' do
  tags %w{recipe compliance}
  recipe do |ast|
    mountres = find_resources(ast, :type => 'mount').find_all do |cmd|
      cmd
    end
    execres  = find_resources(ast, :type => 'execute').find_all do |cmd|
      cmd_str = (resource_attribute(cmd, 'command') || resource_name(cmd)).to_s
      cmd_str.include?('mount')
    end
    mountres.concat(execres).map{|cmd| match(cmd)}
  end
end
```

Example Output

```
$ foodcritic –I /afs/getchef.com/foodcritic-rules/rules.rb .
COMP001: Do not allow recipes to mount disk volumes: ./recipes/default.rb:20
COMP001: Do not allow recipes to mount disk volumes: ./recipes/default.rb:26
```

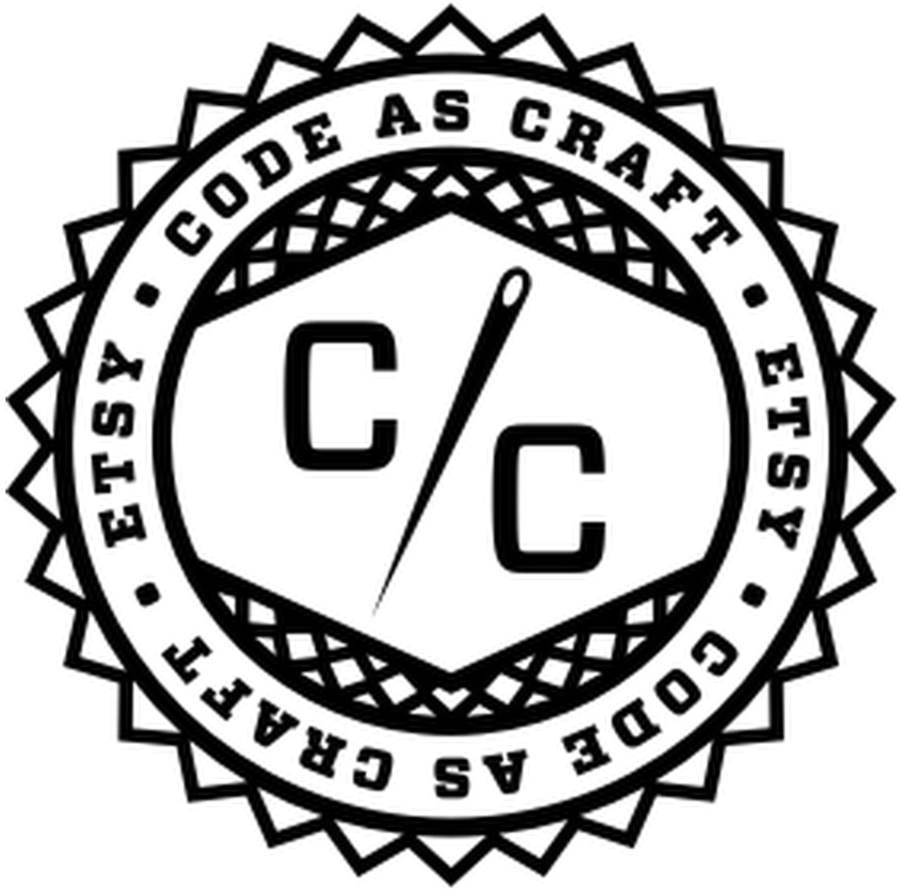


Use A Pipeline

Use Automated Compliance as your Final Test

Security and Compliance are First-Class Citizens

Trust But Verify



Separation of Concerns is a thing

(aka "My tests are failing, so I'll change the tests")

DEMO TIME!

To Review

- Trust (but verify) your domain experts
- Share the cooking
- Leverage Foodcritic
- Use your production audit process in your pipeline
- Did I mention test?

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Questions?

Resources

- Sidney Dekker - *Field Guide to Human Error*
- foodcritic.io
- learn.chef.io
- github.com/mattstratton/infrastruture-smores

Moar Resources

- twitter.com/mattstratton
- speakerdeck.com/mattstratton
- github.com/mattstratton/speaking
- arresteddevops.com

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Join us for Sprints

Friday, May 13 at the Convention Center

First-Time Sprinter Workshop - 9am-12pm in Room 271-273
Mentored Core Sprint - 9am-6pm in Room 275-277
General Sprints - 9am-6pm in Room 278-282

So How Was It? - Tell Us What You Think

Evaluate this session – bit.ly/drupalchef

Thanks!